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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KIM, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,624

Applicant(s)

EVERETT, ALAN L.

Examiner

Christopher S. Kim

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12 and 14-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The response filed December 27, 2005 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "dispenser containing a viscous fluid and having an outlet" recited in claims 17 and 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-21 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17 and 20 recite "...a dispenser containing viscous fluid and having an outlet..." The "Background Of The Invention" section of the specification discloses,

This invention relates to the art of precision dispensing of small quantities of fluid, for example, **viscous** material such as **adhesive** on circuit boards and other surfaces, and more particularly to a new and improved precision dispensing apparatus and method for accomplishing the foregoing. One area of use of the present invention is dispensing small quantities of viscous material, although the principles of the present invention can be variously applied to dispensing other types of fluids. Systems and methods for the deposition of drops of adhesive, conductive epoxy, soldering paste, and other viscous fluids at discrete locations on various surfaces are used extensively in modern manufacturing techniques. (Bolding added)

Applicant gives adhesive as an example of viscous fluid, but the specification fails to define the limits or range of viscosity by the use of the term "viscous." Because every

fluid has a certain viscosity, it is uncertain what fluids are being defined by the recitation "viscous fluid."

In claim 17, paragraphs a-d refer to "the outlet." It is uncertain whether they are in reference to the dispenser outlet or the tip outlet.

In claim 18, paragraphs a-c refer to "the outlet." It is uncertain whether they are in reference to the dispenser outlet or the tip outlet.

Claim Rejections - 35 USC § 103

6. Claims 1-7, 9-12 and 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders (4,131,236).

Saunders discloses a precision dispensing tip comprising: a body 10 having an inlet D and an outlet d; a fluid conducting passage having a first portion 12 and a second portion 13; a housing 21; standoff member 31.

Saunders discloses the ranges of D and d. Saunders also discloses the Relationship of Y with respect to D and d. Saunders teaches a range of Y, D, and d which encompasses applicant's claimed range that D is at least four times d and Y is at least three times the axial length of second portion 13.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided such a dimensional relationship, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 5 and 11, Saunders discloses ceramic materials such as tungsten carbide, diamond and artificial jewels such as artificial sapphires. Saunders does not disclose zirconia ceramic. Zirconia ceramic is well known. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have used zirconia ceramic to make the nozzle of Saunders to reduce cost by utilizing readily available materials.

Regarding claims 17-21, the specification fails to define "viscous fluid," and because every fluid has a viscosity, the recitation "viscous fluid" has been considered to define nothing more than a "fluid."

7. Claims 1, 2, 6, 9, 12, 14, 16-18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebeker et al. (3,924,805).

Nebeker discloses a precision dispensing tip comprising: a body having an inlet 26 and an outlet 27; a fluid conducting passage 24 having a first portion with an axial length F and a second portion with an axial length of E-F; an inlet diameter H; an outlet diameter G; a housing 30.

Nebeker's inlet diameter H is 0.2 inch and outlet diameter G is 0.06 inch. The first portion axial length F is 0.7 inch. The second portion axial length E-F is 0.2 inch. Nebeker's inlet diameter is 0.04 inch less than four times the outlet diameter. Nebeker discloses, in column 5, lines 60-66, that nozzle passage 26 is shaped according to conventional designs for an efficient conversion of pressure to kinetic energy. It would have been obvious to a person having ordinary skill in the art at the time of the invention

to have made the inlet diameter of Nebeker at least 0.24 inch to optimize the conversion efficiency.

Regarding claims 2, 12, 18 and 21, Nebeker does not disclose the outlet diameter being 0.003 inch to about 0.030 inch. Nebeker discloses the outlet diameter G being 0.06 inch. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have made the outlet diameter of Nebeker between 0.003 inch to about 0.030 inch to optimize percussion droplet size.

Regarding claims 17-21, the specification fails to define "viscous fluid," and because every fluid has a viscosity, the recitation "viscous fluid" has been considered to define nothing more than a "fluid."

8. Claims 3-5, 10, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebeker et al. (3,924,805) in view of Saunders (4,131,236).

Nebeker discloses the limitations of the claimed invention with the exception of ceramic material. Saunders discloses ceramic materials such as tungsten carbide, diamond and artificial jewels such as artificial sapphires. Additionally, zirconia ceramic is well known. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have made the device of Nebeker from ceramic material, especially zirconiz ceramic material as taught by Saunders for strength and smooth finish.

9. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nebeker et al. (3,924,805) in view of Vickers (4,342,425).

Nebeker discloses the limitations of the claimed invention with the exception of a protective housing including a standoff. Vickers discloses a housing 106 and a standoff 108. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have incorporated the housing and standoff of Vickers to the device of Nebeker to enable positioning of the device.

Response to Arguments

10. Applicant's arguments with respect to claims 1-12 and 14-21 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's argument of non-analogous art, Saunders and Nebeker et al. are in applicant's field of endeavor. Applicant's claims are directed to a nozzle tip, especially claims 1 and 9. Claims 17 and 20 do recite "viscous fluid" but every fluid has a viscosity. The recitation, "for use with precision dispensing apparatus for delivering controlled amounts of viscous fluid in the form of drops," is merely intended use language. Second, applicant's argument is not commensurate in scope with the claimed invention. The claims are directed to a nozzle tip. The functional recitation (paragraph c in claims 1, 9, 17 and 20), i.e. the manner in which the fluid flows through the nozzle, merely requires the ability to so perform in an apparatus claim. See MPEP 2114, which is incorporated herein. Finally, even if the functional recitation is given full patentable weight, Saunders discloses intend is to prevent liquid separation for the internal surface, i.e., prevent turbulent flow. See Saunders, column 1, lines 55-65. Additionally, drops are inherently formed when fluid jets out of a nozzle. In Nebeker,

flow perturbation is minimized (see column 8, lines 19-30) in creating drops 18 (see figure 2).

Regarding applicant's argument that Saunders nor Nebeker is reasonably pertinent to the problem with which the inventor was involved, Saunders and Nebeker pertain to the problem of sizing a nozzle tip and preventing turbulent flow.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571)

272-4905. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-3750.



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK
February 22, 2006